7.7.4/1

SECRET

[redacted] 50X1

"NOTE THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE ESPIONAGE LAWS, ACT 25 JUNE 1948 (PUBLIC LAW 772 - 80TH CONG.; 18 U.S.C. 793 AND 794; 62 STAT. 683). THE TRANSMISSION OR THE REVELATION OF ITS CONTENTS IN ANY MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW"

October 23, 1961

[redacted] 50X1

Dear Sirs:

Enclosed are four copies of the minutes of the meeting held in Washington on October 6, 1961.

Sincerely yours,

[redacted] 50X1

zmt

Enclosures - 4

[redacted] 50X1

61M0963

DOCUMENT NUMBER

SECRET

[redacted] 50X1

SECRET

Minutes of the Meeting

with the Washington Customer

in Washington on October 6, 1961

Those present were:

Customer: Nick G.

[redacted] John G. 50X1

[redacted] Hil T. 50X1

Mort W.

The main purpose of this meeting was to confer with [redacted] on test 50X1
results obtained from the HRT-2 beacon transmitter. The latest model beacon
was brought in [redacted] for customer comment. The unit was also shown 50X1
to the customer's operations people for approval.

A number of minor changes were suggested. All lettering is to be removed from the outside of the case. An arrow will be used to indicate meter up-scale. Red dots will designate the "on" position of the on-off switch, the hot antenna binding post, and the continuous tone position of the tone jumper. Roman numerals will indicate tuning controls. The grounding rod will be made of sturdier material and the screwdriver will be made stronger. It was decided to mount a schematic inside the unit with an adhesive such that the schematic could be removed if required.

It was requested that some sort of circuit breaker be put into the equipment to eliminate the need for a fuse. [redacted] suggested that a 50X1
current limiting and battery reversal protection transistor would be investigated.

Results of some of the customer's field tests were discussed. A ten mile range was obtained with an HRT-2 feeding an AR/A-42 antenna. Feeding a quarter-wave balloon antenna, the HRT-2 gave approximately 25 miles of range compared with 45 miles of range with the RT/A-3. The RT/A-3 had about 5 watts of output power compared to 10 watts from the HRT-2. The difficulty was felt to be in the matching network on the HRT-2.

Results of testing [redacted] were reviewed. The one major problem 50X1
area was method of measurement of output power. Due to harmonics in the output waveform a low pass filter was inserted between the HRT-2 and the .50Ω load. Insertion loss was assumed by John G. to be less than 10% but it was shown that due to mistermination and meter error the power output was reading over 30% low.

[redacted] 50X1

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A minor problem was encountered in the tone timer circuit staying on at high input voltage or high temperature. It was pointed out that this problem has been corrected in the new timer boards.

No other serious problems were encountered [redacted] but the customer expressed concern over the output tuning range of the HRT-2. 50X1

SECRET

[redacted] 50X1

October 23, 1961

"NOTE THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE ESPIONAGE LAWS, ACT 25 JUNE 1948 (PUBLIC LAW 772 - 80TH CONG.; 18 U.S.C. 793 AND 794; 62 STAT. 683). THE TRANSMISSION OR THE REVELATION OF ITS CONTENTS IN ANY MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW"

[redacted] 50X1

Dear Sirs:

Enclosed are four copies of the minutes of the meeting held [redacted] on October 17 & 18, 1961. 50X1

Sincerely yours,

[redacted] 50X1

zmt

Enclosures - 4

[redacted] 50X1

61M0968

DOCUMENT NUMBER

SECRET

[redacted] 50X1

SECRET

Minutes of the Meeting

with the Washington Customer

in Chicago, October 17 & 18, 1961

50X1

Those present were:

Customer: Nick G.

[redacted] Hil T.
Mort W.
Len B.

The customer was met at the airport and taken directly to the remote test site where tests were conducted using the HRT-2 and RT/A-3 beacon transmitters feeding the AR/A-42, 150 foot balloon and 16 foot whip antennas.

High winds prevented the taking of any useful data on field strength with the balloon antenna since a 10° to 45° angle from the ground was the maximum obtained. Data was obtained on the approximate impedances, which ranged from 50 +j 200 at 1575 kc to 100 +j 590 at 1800 kc. An antenna simulator was used to substitute for the antenna and duplicate the transmitter loading conditions.

Field strength readings were taken using the AR/A-42 antenna with the HRT-2 and RT/A-3. At 1575 kc, where the antenna looked like 25 -j 260 ohms the HRT-2 radiated about 6db higher than the RT/A-3. At 1650 and 1725 kc, with antenna impedances of 25 +j 230 and 50 +j 290, the RT/A-3 radiated 3 to 4 db higher.

The radiation from the whip was measured at about 9 db less than the AR/A-42.

A reactance vs frequency curve was taken on the AR/A-42 set at 1700 kc. The effect of continuous tone modulation on radiated field strength was measured at somewhere on the order of 1 to 2 db of loss.

The ground radials were removed from the AR/A-42 with almost no change in radiated field strength. The ground was grass covered and fairly wet which may have provided good conductivity without radials.

The AR/A-42 caused some difficulties with an intermittent contact somewhere.

The morning of October 19 was spent discussing the results of the field testing. Power outputs were measured into 50Ω. The RT/A-3 was delivering about 8.6 watts versus 6.2 watts for the HRT-2, or about 1.5db difference. (Note: Subsequent investigation of the reason for the low power out of the HRT-2 revealed a faulty oscillator transistor. When the transistor was replaced the output went from 7.5 watts at 15 v dc to 10.5 watts, an increase of 1.5db. The RT/A-3 was operating from 320 volts and 6.5 volts filament and the HRT-2 from 13.8 v dc.

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Three questionable areas were to be resolved and reported on by October 20. They are:

1. Why is the output power and efficiency low?

2. Can a pi-matche be effected which will give a maximum power output loss of 1.5db over a range of loads of 10 to 250 ohms resistive and ±j 600?

3. Are there any parasitic oscillations in the unit that would show up as false peaking during tuning?

The following delivery dates were set:

October 24 - Ship 2 HRT-2 transmitters
Present the rough draft of the proposal for 160 units.

26 - Test transmitter prototype

31 - Ship a minimum of 5 units (10 desired)

November 7 - Ship 2 test transmitters

30 - Ship balance of HRT-2 units

The customer requested that [redacted] order 26 Mallory 303247 batteries for him. He requested that they be charged to his project rather than the service contract. It was pointed out that this would extend the scope of the order. 50X1

It was pointed out that the customer has not been receiving monthly project reports as are called for in the contract, but it was mutually agreed that because of the semi-monthly meetings and minutes thereof, the monthly reports would be superfluous.